

Name _____

Date _____

1.6, 3.5, 3.6 Quest – Coordinate Plane
STUDY GUIDE --- QUEST WILL BE 43 POINTS

FORMULAS:

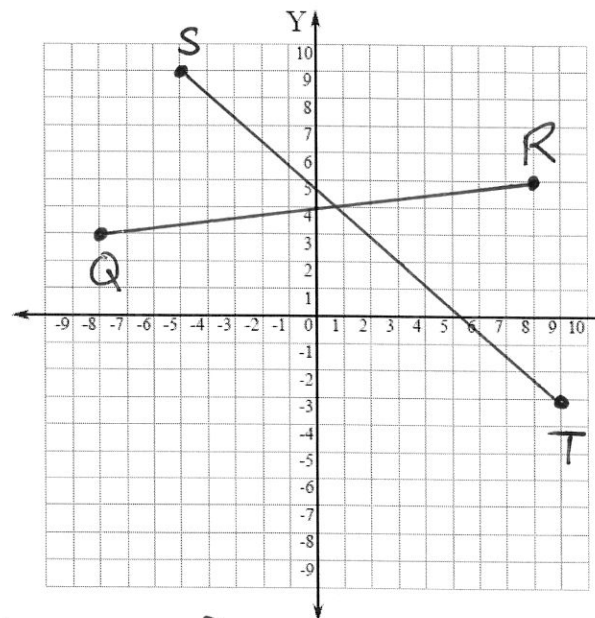
Distance Formula: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$	Midpoint Formula: $M\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}\right)$	
Slope Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$	Slope-Intercept Form: $y = mx + b$	Point-Slope Form: $(y - y_1) = m(x - x_1)$

FINDING THE DISTANCE OF A SEGMENT AND THE COORDINATES OF THE MIDPOINT.

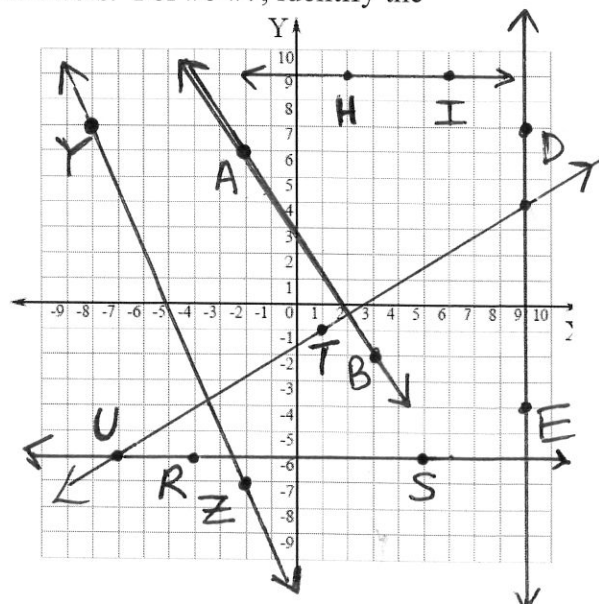
Answer the questions in the space provided. Circle your final answer. (3 points each).

1. Find ST .2. Find the coordinates of the midpoint of \overline{ST} .3. M is the midpoint of \overline{JK} . J has coordinates (8, -5), and M has coordinates (2, -7). Find the coordinates of K.

(HINT: USE THE COORDINATE PLANE TO GRAPH THE POINTS.)

**CALCULATING SLOPE.**

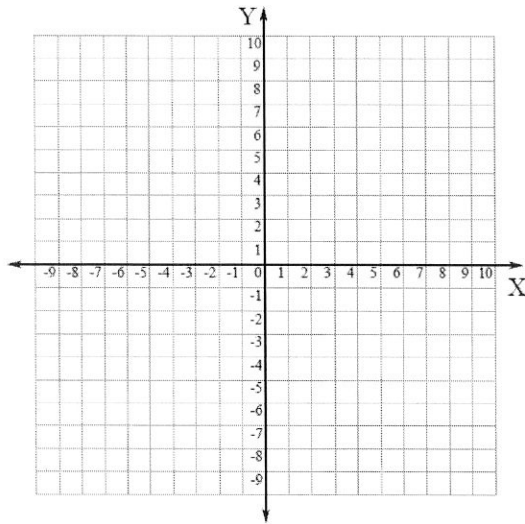
For #4-#5, find the slopes of the lines in the coordinate plane. Circle your answers. For #6-#7, identify the relationships between the indicated lines. (2 points each.)

4. \overleftrightarrow{YZ} 5. \overleftrightarrow{DE} 6. Identify \overleftrightarrow{AB} and \overleftrightarrow{TU} as parallel, perpendicular or neither.7. Identify \overleftrightarrow{HI} and \overleftrightarrow{RS} as parallel, perpendicular or neither.

GRAPHING LINES AND WRITING THE EQUATION OF A LINE IN SLOPE-INTERCEPT FORM.

Answer the questions in the space provided. Circle your final answer.

8. (2 points) Graph: $y = -\frac{3}{4}x + 2$



9. (2 points) Write the equation of the line passing thru $(-4, 5)$ with a slope of 3.

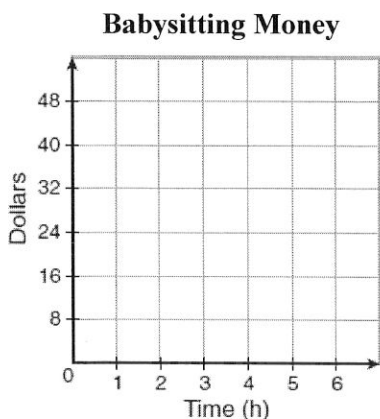
10. (3 points) Write the equation of a line passing thru the points $(-4, -5)$ and $(-6, -3)$.

APPLICATIONS.

A map of an amusement park is shown on a coordinate plane, where each square of the grid represent 1 square meter. The concession stand is at $(-11, 14)$, the Merry-Go-Round is at $(16, -5)$, and the Ferris wheel is at $(-3, 15)$. Find each distance to the nearest tenth of a meter.

11. The Fortune Teller is at the **midpoint** between the Merry-Go-Round and the Ferris wheel.
What is the distance from the Fortune Teller to the Ferris wheel? (3 points).

12. Jackie earns money babysitting on Saturdays. She starts at noon. By 3:00 pm, she has earned \$24. At 5:00pm, Kyle has earned \$40. **Graph a line to show Jackie's earnings and find the slope of the line to tell how many dollars she earns per hour.** (3 points).



13. Ms. Williams is planning to buy T-shirts for the cheerleading camp that she is running. **After buying how many T-shirts would both companies' total costs be the same?** (3 points).

	Art Creation Fee	Cost per T-shirt
Company A	\$70	\$10
Company B	\$50	\$12

